



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
01.10.2014 Bulletin 2014/40

(51) Int Cl.:
A61B 17/70 (2006.01)

(43) Date of publication A2:
18.04.2012 Bulletin 2012/16

(21) Application number: **11010267.0**

(22) Date of filing: **25.01.2008**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT
RO SE SI SK TR**

(30) Priority: **19.07.2007 US 950809 P**
27.07.2007 PCT/US2007/074633

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
08714008.3 / 2 166 972

(71) Applicant: **Synthes GmbH**
4436 Oberdorf (CH)

(72) Inventors:
• **Gabelberger, Josef**
West Chester, PA 19380 (US)
• **McShane, Ed**
Collegeville, 95 19426 (US)

- **Vennard, Daniel**
Clayton, DE 19938 (US)
- **Angert, Nick**
Paoli, PA 19301 (US)
- **Davis, Barclay**
Glenmoore, PA 19343-8922 (US)
- **Schwer, Stefan**
979540 Loerrach (DE)
- **Schaer, Manuel**
4132 Muttenz (CH)
- **Norman, Lee-Ann**
Havertown, PA 19083 (US)
- **Halbeisen, Reto**
4243 Dittingen (CH)
- **Niedermann, Benno**
8052 Zürich (CH)

(74) Representative: **Lusuardi, Werther**
Dr. Lusuardi AG
Kreuzbühlstrasse 8
8008 Zürich (CH)

(54) **Clamps used for interconnecting a bone anchor to a rod**

(57) The present invention relates to a clamp, and, more particularly, to a clamp for securing the position of a bone anchor with respect to a longitudinal rod, preferably for use in the spine. The clamp may include a housing, a rod clamping assembly, and a bone anchor clamping assembly. The clamp preferably enables the longitudinal axis of the rod to be offset or laterally displaced from the longitudinal axis of the bone anchor. The rod clamping assembly and the bone anchor clamping assembly are preferably moveably coupled to the housing in order to provide increased flexibility to better accommodate the location and geometry of the longitudinal rod and to better accommodate bone positioning.

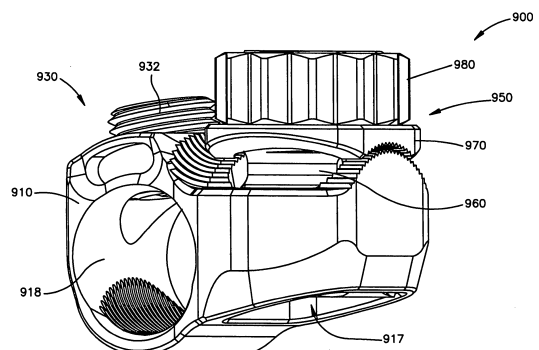


Fig.43



EUROPEAN SEARCH REPORT

 Application Number
EP 11 01 0267

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2006/241596 A1 (REZACH ALAN [US]) 26 October 2006 (2006-10-26)	1,3,7, 10-14, 16-18	INV. A61B17/70
Y	* paragraph [0022]; figures 3,4,7 * -----	2,4,6	
A	US 2005/070901 A1 (DAVID JEROME [FR]) 31 March 2005 (2005-03-31) * figures 1,2 *	1	
Y,P	US 2007/238335 A1 (VELDMAN MICHAEL S [US] ET AL) 11 October 2007 (2007-10-11) * figure 1 * -----	2,4,6	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC) A61B
Place of search		Date of completion of the search	Examiner
The Hague		2 May 2014	Barton, Simon
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

 1
EPO FORM 1503 03.82 (P04001)



Application Number

EP 11 01 0267

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-4, 6, 7, 10-14, 16-18

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
EP 11 01 0267

5

10

15

20

25

30

35

40

45

50

55

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-4, 6, 7, 10-14, 16-18

Clamp with serrations

2. claims: 1, 5, 15

Clamp with convergence of set screw and clamping mechanism
axes

3. claims: 1, 7, 8

Clamp with threaded collet

4. claims: 1, 9

Clamp with set screw with concentric ridges

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 11 01 0267

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

02-05-2014

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006241596 A1	26-10-2006	NONE	

US 2005070901 A1	31-03-2005	EP 1663033 A2	07-06-2006
		FR 2860138 A1	01-04-2005
		US 2005070901 A1	31-03-2005
		WO 2005030069 A2	07-04-2005

US 2007238335 A1	11-10-2007	CN 101420917 A	29-04-2009
		EP 2001380 A2	17-12-2008
		JP 2009532182 A	10-09-2009
		KR 20090007385 A	16-01-2009
		US 2007238335 A1	11-10-2007
		WO 2007118016 A2	18-10-2007

15

20

25

30

35

40

45

50

55

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82